

Intellectual property rights (patents, copyrights, trademarks etc.):
Property rights or special privileges? Do they remove or create conflict?
Do they enhance or hinder innovation?

How and why were they created? What was the motivation? How do they work today?
Would the world be possible without them? Are there any alternatives? # open innovation

In this essay I will analyze the purpose and efficiency of intellectual property rights (=IPR). I will start with a definition and overview of different forms of IPR. After pointing out that the main aim of IPR is innovation I will take a closer look at alternative incentives for innovation. Afterwards I will examine IPR as a motivation for innovation and analyze its poor efficiency. This will also lead me to the question whether the term property rights is appropriate for IPR. I will also examine cases in which IPR may play a more significant role and will discuss whether there are alternatives in such cases, too.

IPR are rights on creations of the intellect. According to the current US-Law they are divided into four main subcategories (copyright, patent, trade secret and trademark). A copyright exists for example for music, books or software coding. It protects the expression of an idea. The idea itself is not protected. For example the author of a book has a right that his text is not copied word by word, but he cannot prevent other authors to use ideas of his plot. Copyright is effective when the idea has been realized in a physical way and lasts until 70 years after the death of the author (or 95 years if the author then still owns the copyright). A patent in contrast has to be requested and lasts 20 years after the issuance. It is used for protection of inventions or improvements for example of machineries or in processes. The patent “protects” the patentee from third parties using his invention without his permission. Trade secrets are a protection for information that gives a competitive advantage as long as it is not known by competitors and other third parties. A consequence is for example that a disloyal Coca-Cola employee who tells Pepsi secret ingredients of Coca Cola’s lemonade would have to pay compensation. Finally trademarks are a protection that serve to identify the producer. This includes words, phrases, symbols or designs. The IPR which are mainly analyzed in this essay are copyrights and patents (Kinsella 2001; USPTO).

The main aim of IPR is the increase of innovation. This is theoretically done by IPR because the innovator gets a reward for his innovation. He has for example exclusive rights to use a technology or competitors have to pay a fee for using that new technology. Therefore he has generally an incentive to be innovative. The current patent system for examples warrants the inventor some kind of monopoly for the use of his technology for a certain time. A second theoretical aim is the spread of knowledge about an innovation. Regarding the patent system this would mean that, because an innovation is patented more people know about that innovation and can interchange their knowledge with each other. As you may already know this argument does not work. Patents are composed by advocates and shall ensure a “damage” compensation for the company in case a competitor or another third party do not respect the patent. Therefore they are written in a way that experts of law can understand their content but usually not creative developers. The “innovation aim” seems to make much more sense at first sight and will be examined later more closely (Boldrin and Levine 2013; Ilie 2014)

Besides IPR companies have also another motivation to be innovative: the first mover advantage. The first mover advantage contains for example the effect that companies who are at the market at first receive customer reactions more quickly. So they can adjust the new technology more quickly to the customer needs than potential new competitors. But not only can the quality be matched better with a first mover advantage. Also production costs per unit decrease with a higher amount of produced products. I am not thinking about the overhead costs that can be distributed on more products in the first place now. What I want to focus on is that companies which produce a lot of products find better and more profitable ways of doing it. They sooner recognize how to improve their processes like for example a proper just in time production. A rule of thumb for that experience curve effect is: Duplication of cumulative amount of produced products reduces production costs by 20-30%. The first mover has therefore two strategic options about how to deal with the threat of entering competitors. He can reduce the prices of the technology so that potential competitors do not enter the market. Another option is to wait until there are competitors in the market and then reduce the prices. This will lead to a loss for the followers and in some case they will leave the market and sell their investment to the first. The first mover advantage also has increased importance because product-life-cycles are getting shorter. As a result the followers have less time to compensate the experience curve effect. (Schneider 2015; Boldrin and Levine 2013)

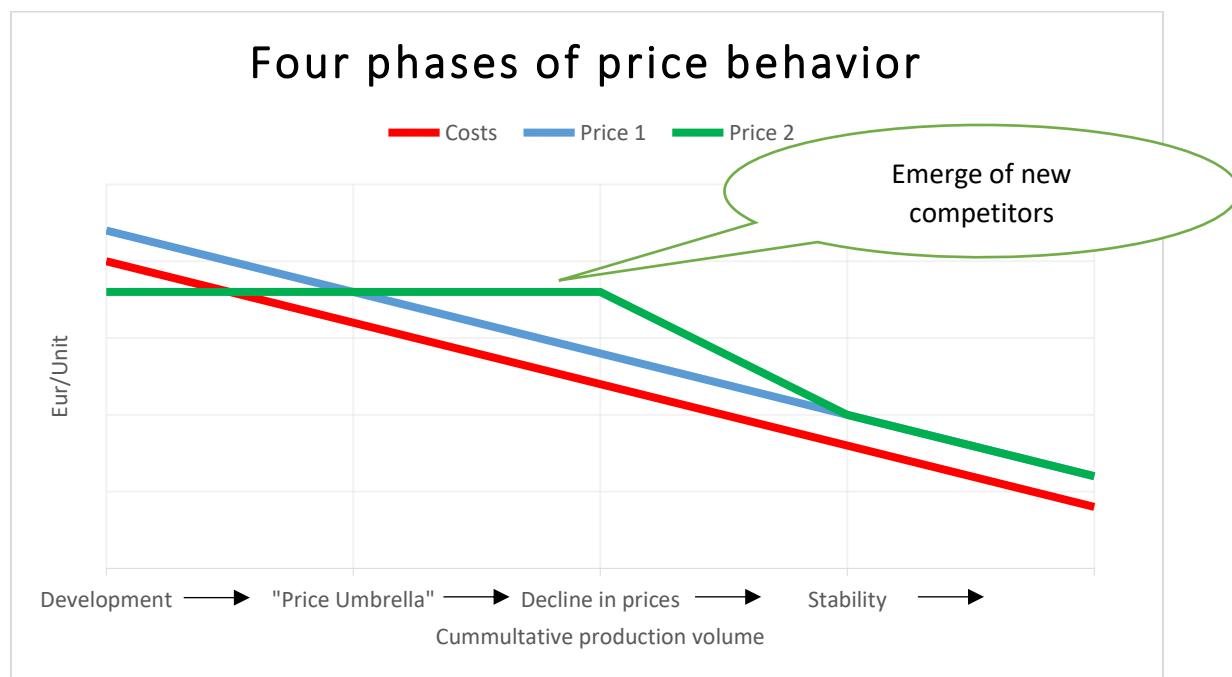


Figure 1: Four ideal-typical phases of price behavior
(Based on: Schneider D., Unternehmensführung, p. 99, <https://books.google.cz/books?id=fH1fCgAAQBAJ>)

An example of the benefits of innovation can also be found in the smartphone market. In the first quarter of 2015 Apple received 92% of the profits although the volume based market share is less than 20 percent. In the beginning of the smartphone area Apple had the highest amount of produced smartphones and therefore the best experience curve effects. But meanwhile other competitors have a better cost situation. A good cost situation is especially important in developing markets. When markets mature a changing price does not cause such a big change in demand anymore (decreasing price-elasticity). With a decreasing

price-elasticity the cost-situation also plays a less important role. A reason why Apple makes therefore the most profit is among other things that the innovations Apple invented make people willing to pay higher prices for a premium Apple smartphone. As long as Apple insures new innovation it can continue with his high-price strategy and does not have to participate in the harmful price competition the other competitors have. (Ovide and Wakabayashi 2015; Boldrin and Levine 2013)

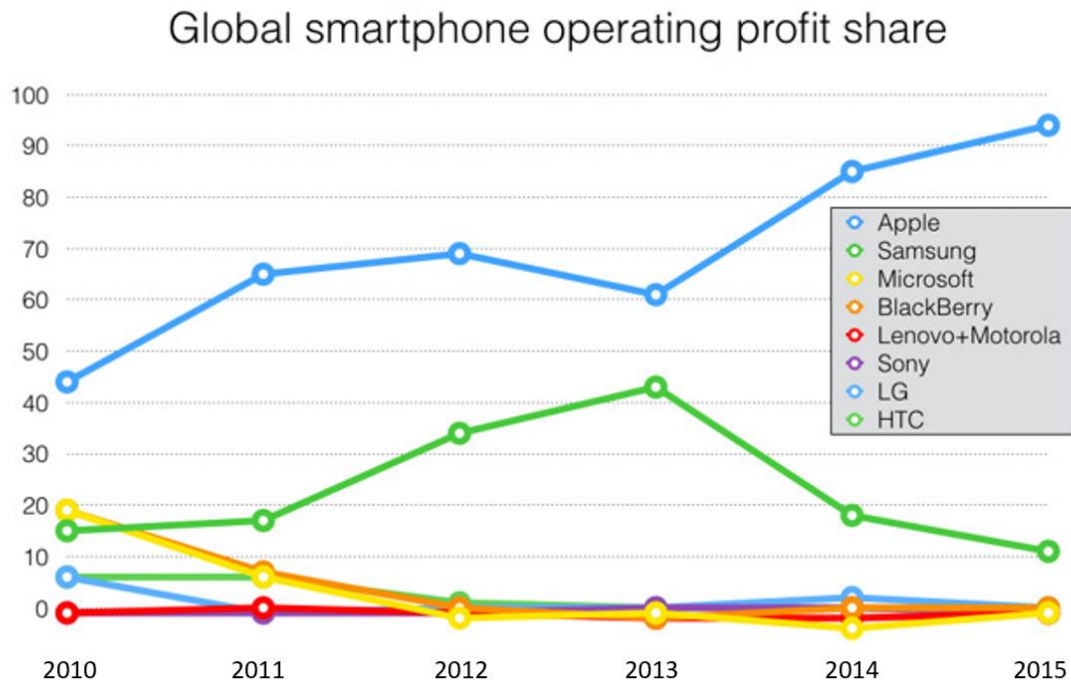


Figure 2: Global smartphone operating profit share
 (Source: <http://static.androidiani.com/wp-content/uploads/2015/11/14965-10909-CanaccordGenuitySmartphoneprofitshare-l.jpg>)

As we see companies do have a big motivation to be innovative without IPR (e.g. first mover advantage or for being a premium brand). An additional incentive are definitely IPR that secure the inventor some kind of monopoly for a certain time. But what are the consequences of such a monopoly? Possible new inventors are precluded to advance that technology. If they nevertheless want to use that technology they have to pay at least a fee for that. As a result of that few people try to enhance the technology and innovation decreases. In fact IPR are usually used in an industry sector when the innovative phase is already over. Then rent seeking is more and more important and IPR are an “acceptable gift” for that. But that kind of gift was not the intention why this innovation was originally invented. Big and powerful companies also make large lobbying efforts to create IPR that are suitable for them. Those companies are often strongly strategically dependent on those IPR, because they made their innovation in the past and an important part of their income is due to IPR. Their performance on the present market in contrast is sometimes quite poor. According to that IPR are more a privilege for the “owning” companies than justified property rights. (Boldrin and Levine 2013)

Property rights were generally designed to avoid conflicts. This function is fulfilled regarding to physical property. Because material things are rare resources the original owner can't use his property any more when it is stolen by someone else. Therefore such a theft leads to a conflict between original owner and

thief. To avoid the conflict theft must be prevented which is done by penalties for disrespecting property. Immaterial resources are not scarce. If someone “steals” the idea of someone else, the original “owner” can still use his idea. So it is not certain that a conflict would arise without IPR. The original owner could even be proud that his idea is successful. Another possibility is that he learns how his idea could be modified and also profits by that modification. Of course he doesn’t have to be pleased that his idea is used in every cases. But that does not have to lead to a conflict. In contrast if there exist IPR, conflicts about the amount of damage compensation and so on are possible, too. As we see IPR do not fulfill the function to avoid conflicts which is another evidence that the term property rights is not appropriate. (Kinsella 2001)

I think a sector in which IPR however may be needed, is in the cases in which the other incentives for innovation, like the first mover advantage, don’t work. Fundamental research might be a situation like that. Companies are usually interested in innovations that can be successful in today’s market. To initiate a possible development without knowing if they profit by that development or if a third party does is much less attractive. IPR may offer a compensation for initiating a development. Another solution might be that basic research is financed by tax. An interesting question to analyze in that case would be who pays such taxes, so that the system is effective. The importance of securing fundamental research is also an important topic on the UN Climate Change Conference 2015 in Paris. In that case 19 countries including the United States and China “want” to double their spending in fundamental energy research over the next 5 years. This so called “Mission Innovation” is combined with the investment of rich private investors like for example Bill Gates. Those investors mainly supply capital for clean energy technologies that offers possibilities to generate affordable energy. (Boldrin and Levine 2013; Warrick 2015)

To sum up the conclusions: IPR are in most cases not a necessary incentive for innovation and even harm innovation, because with IPR few possible redevelopers are able to experiment with a technology. There is no reason for thinking that IPR reduce conflicts, because only property rights on material things fulfil that function sufficiently. Comparing additionally the enormous lobbying efforts of powerful companies with the influence of other parties the term special privileges seems more appropriate than property rights. There are also alternative and natural incentives for innovation in most cases. Such motivations may be for example the first mover advantage or a high price-strategy. Nonetheless in cases in which those natural incentives don’t work innovation has to be secured, too. IPR are one possibility for securing it. Another one is financing such cases by tax. Intuitively, I would say the most efficient way is a mix of both possibilities. But to be sure a closer empirical examination about those exception cases is necessary. Nevertheless in the cases in which the natural incentives for innovation are working “intellectual property rights” should be removed.

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References

- Boldrin, Michele, and David K. Levine. 2013. "The Case Against Patents." *The Journal of Economic Perspectives* 27: 3–22. www.jstor.org/stable/41825459.
- Ilie, Livia. 2014. "Intellectual Property Rights: An Economic Approach." *Procedia Economics and Finance* 16:548–52. doi:10.1016/S2212-5671(14)00837-5.
- Kinsella, Stephan N. 2001. "Against Intellectual Property." *Journal of Libertarian Studies* 15 (2): 1–53. www.mises.org.
- Ovide, Shira, and Daisuke Wakabayashi. 2015. "Apple's Share of Smartphone Industry's Profits Soars to 92%: Apple's share of profits is remarkable given that it sells less than 20% of smartphones." Accessed December 05, 2015. <http://www.wsj.com/articles/apples-share-of-smartphone-industrys-profits-soars-to-92-1436727458>.
- Schneider, D. 2015. *Unternehmensführung - Instrumente für das Management in der Postmoderne: Kompakte Studienausgabe, 2., erweiterte Auflage*: Books on Demand. <https://books.google.cz/books?id=fH1fCgAAQBAJ>.
- USPTO. "Trademark, Patent, or Copyright?" Accessed November 29, 2015. <http://www.uspto.gov/trademarks-getting-started/trademark-basics/trademark-patent-or-copyright>.
- Warrick, Joby. 2015. "Obama, Bill Gates to lead major effort to spur spending on climate research." Accessed December 05, 2015. https://www.washingtonpost.com/national/health-science/obama-bill-gates-to-lead-major-effort-to-spur-spending-on-climate-research/2015/11/29/80b157ca-96e7-11e5-94f0-9eeaff906ef3_story.html.